Table S1. Sensitivities and specificities of haplogroup predictions.

HaploGroup	HH550		HH610		GSA	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
OX	100%	98.5%	99.3%	100%	8.1%	64.7%
W	100%	98.5%	94.5%	98.4%	15.5%	100%
K	100%	100%	100%	100%	96.4%	99.5%
U	100%	100%	100%	100%	95.5%	99.7%
J	100%	100%	100%	100%	98.8%	98.8%
T	100%	100%	99.3%	100%	98.4%	100%
I	100%	100%	100%	99.2%	100%	97.8%
HHV*	97.8%	99.9%	98%	97.1%	94.7%	91.4%

Figure S1. Population structures of the study samples revealed by principal component analysis. Cases and controls are shown as black and grey dots respectively. Four reference European populations from 1000 Genome, including Utah Residents with Northern and Western European Ancestry (CEU), Toscani in Italia (TSI), British in England and Scotland (GBR), and Iberian Population in Spain (IBS) are shown as green, purple, blue and orange respectively.

A. Population structures of the HH550 cohort.
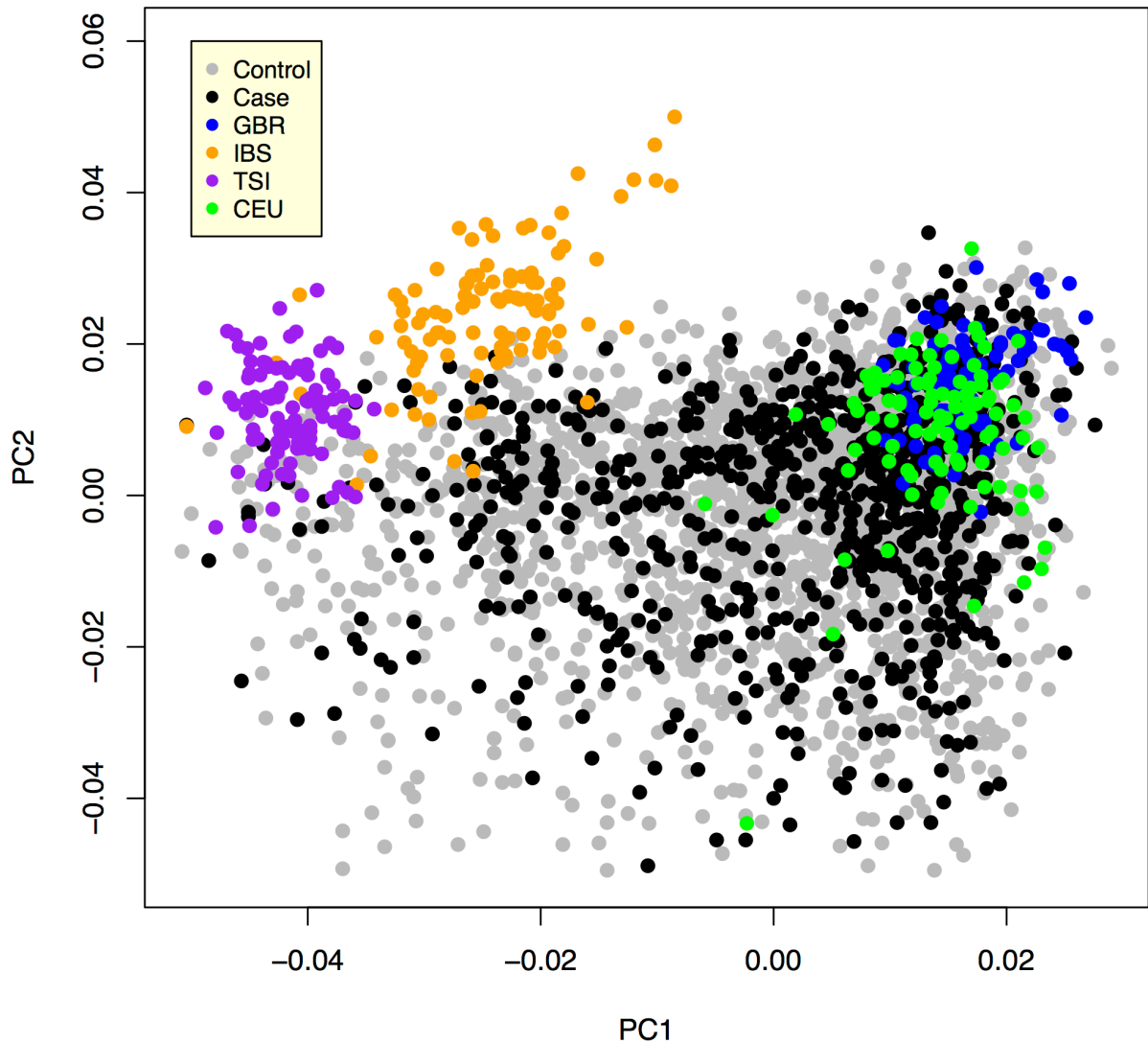
B. Population structures of the HH610 cohort.
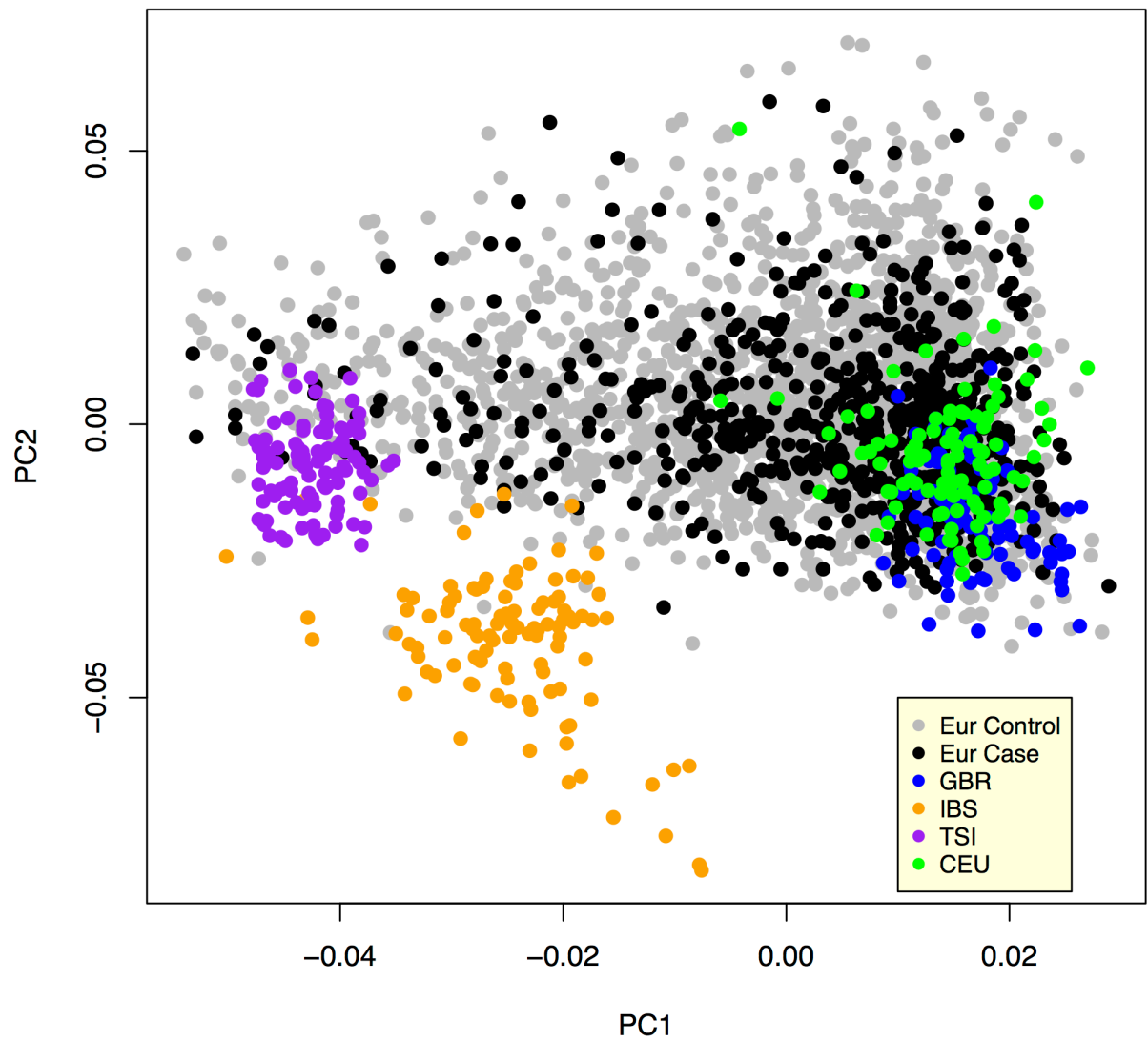
C. Population structures of the GSA cohort.